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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,074	07/18/2003	Oren V. Peterson	T9214.CON.CIP2	2684
20449	7590	01/31/2005	EXAMINER	
KARL R CANNON PO BOX 1909 SANDY, UT 84091			LANGEL, WAYNE A	
			ART UNIT	PAPER NUMBER
			1754	
DATE MAILED: 01/31/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/623,074

Applicant(s)

PETERSON, OREN V.

Examiner

Wayne Langel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-93 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-93 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-60 and 83-86 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Schora et al. Schora et al disclose a process comprising reacting steam and oxygen with oil shale producing a product gas comprising hydrogen and carbon monoxide. (See col. 10, lines 32-54.) Schora et al teach at col. 6, lines 17-46 that carbon dioxide is formed as a byproduct, the product gas may be passed to a catalytic converter to convert CO in the gas to hydrogen by the water-gas shift reaction, and that part of the product gas (the carbon monoxide) may be recycled. Accordingly all the limitations of these claims appear to be disclosed by Schora et al. In any event, any limitations not specifically disclosed by Schora et al would be prima facie obvious thereover, since the basic process is disclosed and any differences would be matters of routine design to one of ordinary skill in the art.

Claims 61-82 and 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schora et al. Schora et al is relied upon as discussed hereinbefore. The difference

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between the process disclosed by Schora et al, and that recited in claims 61-82 and 93, is that Schora et al do not specifically disclose that the oil shale should be contacted countercurrently with the steam, oxygen and carbon monoxide. It would be prima facie obvious to modify the process of Schora et al by contacting the oil shale countercurrently with the gas, since it is apparent from col. 5, lines 14-58 of Schora et al that the important feature is that the oil shale be contacted with the gas, and it is well-known that such contact could be accomplished cocurrently or countercurrently. There is no evidence on record of unexpected results which would emanate from the use of countercurrent flow in the process of Schora et al, as opposed to cocurrent flow.

Claims 87-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schora et al as applied to claims 1-60 and 83-86 above, and further in view of Mori et al. It would be further obvious from Mori et al to percolate the effluent of hydrogen and CO formed in the process of Schora et al through fluidized beds of magnetite to form hydrogen, since Mori et al disclose such step at col. 7, lines 7-18 and col. 12, lines 6-14, and Schora et al suggest at col. 6, lines 36-38 that purification means 51 may include any suitable purification or upgrading for the production of the desired hydrogen gas as known to the art.

Claims 1-60 and 83-86 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fujimura et al '858. Fujimura et al '858 discloses a method for treating wastes by combusting the wastes in the presence of oxygen and steam to produce a gas containing hydrogen. (See col. 7, lines

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21-62.) . The combustion chamber of Fujimura et al '858 would also contain CO, since the reference discloses a preliminary gasification step at a temperature ranging from 450-950 C at col. 7, lines 21-25, and Fujimura et al '224 suggests at col. 7, lines 21-32 that gasification temperatures greater than 650 C result in the formation of CO. Fujimura et al '858 teaches at col. 4, lines 17-20 that the invention is applicable to the treatment of oil shale. Accordingly all the limitations of these claims appear to be disclosed by Fujimura et al '858. In any event, any limitations not specifically disclosed by Fujimura et al '858 would be prima facie obvious thereover, since the basic process is disclosed and any differences would be matters of routine design to one of ordinary skill in the art. Regarding claims 83-86, Fujimura et al '858 teaches at col. 2, lines 44-57 that the effluent gas may be subjected to a CO-shift converter to produce hydrogen.

Claims 87-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimura et al '858 as applied to claims 1-60 and 83-86 above, and further in view of Mori et al. It would be further obvious from Mori et al to percolate the effluent of hydrogen and CO formed in the process of Fujimura et al '858 through fluidized beds of magnetite to produce hydrogen, since Mori et al disclose such step at col. 7, lines 7-18 and col. 12, lines 6-14, and Fujimura et al '858 suggest at col. 17, lines 51-56 that the gas produced may be refined to form hydrogen gas by any known or suitable manner.


Claims 87-92 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the

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invention. The specification does not enable one to react hydrogen and CO with magnetite to produce hydrogen, since Mori et al teach at col. 7, line 11 and col. 12, line 11 that magnetite reacts with CO to form FeO and carbon dioxide, i.e., no hydrogen would be formed. Moreover Mori et al teach at col. 7, line 10 and col. 12, line 13 that hydrogen would react with magnetite to form FeO and water.

Smith et al is made of record for disclosing a process for recovering hydrogen from the cracked vapors of a catalytic cracking process.

Any inquiry concerning this communication should be directed to Wayne Langel at telephone number 571-272-1353.

  
Wayne Langel  
Primary Examiner  
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